Remarks

Applicant hereby affirms election of Group 1, Claims 1-6, drawn to a pyrrolidine monomer. Please cancel Claims 7-12.

Rejections under 35 USC § 102

Claims 1-6 have been rejected under 35 USC § 102(b) as being anticipated by WO 96/05828 (Monn, James et al., "the Monn publication"). According to the Examiner, the reference discloses the claimed compounds with R3 and R4 groups as the amine protecting groups and R1 and R2 as a hydrogen or carboxy protecting group. Applicant respectfully traverses this basis of rejection.

Applicant submits that the compounds disclosed under Formula 1 in the Monn publication do not have an amine protecting group at position R3, and thus do not anticipate the claimed compounds. The Monn publication discloses R3 substituents that are not amine protecting groups, and are not chemically equivalent to compounds in this class. In fact, the Monn publication discloses at page 8, starting in the middle of the page, compounds falling into the class of amine protecting groups. This list of compounds extends from the middle of page 8 to the bottom of page 9. None of the compounds listed as amine protecting groups are listed as R3 substituents, and vice versa - none of the R3 substituents appear in the compounds described as amine protecting groups. Thus, the Monn publication itself provides evidence that one skilled in the art would not consider the substituents listed under R3 to be amine protecting groups.

The substituents listed under R3 are not optimized to be easily removed, as are amine protecting groups. An amine protecting group is used to protect the amine position during certain reactions, but must be capable of being easily removed later, to be replaced with another moiety in the synthesis of the desired end product. In the present invention, the desired end product is the oligomer. In contrast, the compounds shown in Formula 1 in Monn are the desired end products, and the R3 substituents are optimized to interact with the glutamate receptor; they are not intended to serve as amine protecting groups during a later step in a synthetic scheme. Applicant respectfully submits that WO96/05828 does not anticipate the claimed compounds and requests withdrawal of this basis of rejection.

Rejections under 35 USC § 103

Claims 1 and 3-6 have been rejected under 35 USC § 103(a) as being obvious and unpatentable over US 5,473,077 (Monn, James et al., "the 077 patent"), as well as the Valli abstract and the Kozikowski abstract. Applicant respectfully traverses this basis of rejection.

The compounds shown in the '077 patent have no protecting group at the 1 position (amine) on the ring structure, and have two esters, at both the 2 and 4 positions. In contrast, the compounds of the present invention have a protecting group at the 1

position, an acid at the 2 position and an ester at the 4 position. Applicant respectfully submits that the claimed compounds are not obvious in view of the '077 compounds. First, as mentioned above, the claimed compounds are used in the synthesis of the desired end product, the oligomer. To make the oligomer, positions 2 and 4 can not have the same moiety; when one is an ester, the other must be an acid. A compound having two esters or two acids is useless in the synthesis of the oligomer.

Further, synthesis of a ring structure having an acid and ester is not straight forward, because this difference must be maintained at all steps in the synthetic process. A method of synthesizing a compound having these features is not taught or suggested in the '077 patent, and the reaction method described in this patent could not be used to make the compounds of the present invention. For example, preparation 4 shown in the '077 patent discloses a method of synthesis in which a carbonyl is converted to an amino acid using the Bucherer-Bergs reaction. In this reaction, the carbonyl is converted to a hydantoin, which is then cooked in NaOH overnight to break apart the molecule to make an amino acid. In the process the ethyl group is removed from the ethyl ester. In the synthetic method shown, two ethyl groups are then put back on the acids generated.

The compounds of the present invention can not tolerate these steps, particularly the overnight cooking in NaOH. The method of synthesis in the present invention makes a hydantoin in similar way, but uses a special two-step process with two protecting groups on the hydantoin. Hydrolysis is carried out at room temperature, for approximately 30 minutes in dilute NaOH, which does not destroy the tertbutyl ester, so that an amino acid is made having a tertbutyl ester attachment. The resulting intermediate has two carbonyl groups, and one is converted from an acid to a methyl ester. A protecting group is put on the new amine, while the tertbutyl ester is removed in a way that does not touch the methyl ester.

Thus, the presently claimed compounds are different from those shown in the '077 patent, are made by a different method, and have a different end use. One skilled in the art would not look to the '077 patent for a teaching of how to make or use the compounds of the present invention.

Similarly, the compounds shown in the Kozikowski and Valli references do not have a protecting group at position 1, and have the same moiety at the 2 and 4 positions, either two esters or two acids. Moreover, the compounds disclosed in both abstracts are described as glutamate receptor agonists or antagonists. For all of the reasons set forth above in regard to the '077 patent, Applicant submits that the compounds of the present invention are not obvious in view of the compounds shown these two references. Applicant submits that the claimed compounds are not obvious in view of any of the cited references and respectfully respects withdrawal of this basis of rejection.

Double Patenting Rejection

Applicant submits herewith a terminal disclaimer over copending application Serial No. 10/613961, to obviate the double patenting rejection.

Summary

As all outstanding issues have been addressed, Applicant respectfully submits that Claims 1-6 are not anticipated by, or obvious in view of, the cited references. A Notice of Allowance is respectfully requested at an early date.

Respectfully submitted,

Debra Z. Anderson
Registration No. 44,506
Eckert Seamans Cherin & Mellott, LLC
600 Grant Street, 44th Floor
Pittsburgh, PA 15219
(412) 566-1910
Attorney for Applicant